

rate from this disease has been cut from ten per thousand in 1902 to two per thousand in 1924. The rate was greatly increased in 1916 and 1917 because all the tuberculous prisoners from the state prison at Folsom were transferred to San Quentin for treatment. Many of these men were in bad condition and died soon after the transfer.

Each prisoner on entering San Quentin is given a thorough physical examination, and at this time cases of tuberculosis are discovered and the patient immediately hospitalized before he can spread the infection. Next after tuberculosis as a cause of death come legal executions. In 1902 executions by hanging were concentrated in San Quentin instead of being done by the sheriffs in the various counties. The largest number occurring in any year has been seven, while in the year 1918 there was none.

The largest number of suicides in any year was three. The most common method of suicide was by jumping from a height, although suicide by hanging, drowning, and cutting of the throat are recorded. One man saturated his clothing with kerosene and set fire to himself.

The great influenza epidemic of 1918 carried off only three. Very strict hospitalization orders were enforced, and all prisoners upon the first symptoms were immediately sent to bed.

The murders committed in prison amount to slightly less than two each year. Their causes are many. Jealousy, race hatred, escapes, and fits of passion, frequently causes, slightly intensified by surroundings, which might prompt the same act on the outside. It seems, however, that there is more of tragedy in the deaths which occur inside the walls than those outside.

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**Glycosuria, in itself, can no longer be regarded as a sign of a single disease.** It appears more rational to think of glycosuria as a symptom such as jaundice, angina, or headache, the cause of which must be ascertained in each case. The diagnosis of renal glycosuria should not be arrived at hastily, since unquestionable instances of this condition are uncommon and few cases have been followed for a sufficient period to be certain of the final outcome. An elevation of the renal threshold, so that hyperglycemia exists without glycosuria, occurs occasionally in diabetics who have been treated with insulin. Present information would indicate that a constant elevation of the threshold is a disadvantage to the organism because of the excessive work continuously thrown upon the internal secretion of the pancreas. The four important groups of nondiabetic glycosurias associated with an elevated blood sugar content are the alimentary, neurogenic, toxic, and the endocrine. The endocrine group at the present time represents a large and poorly understood one which is associated with a disturbance in the function of the glands of internal secretion. Perhaps the most outstanding example is the diminished carbohydrate tolerance of hyperthyroidism as shown by the presence of glycosuria and an abnormal blood sugar curve. The glycosurias accompanying pituitary and adrenal disturbances need further experimental study. True pancreatic diabetes offers especial difficulty in the diagnosis primarily in the three following groups of cases: (1) asymptomatic glycosuria; (2) patients complaining of the complications of diabetes only; (3) patients first seen in coma.—J. Lab. and Clin. Med.

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An investigation committee in England has found that only 15 to 20 per cent of drug addicts treated achieve a lasting cure.

## THE TECHNIQUE OF ADMINISTRATION OF SODIUM TETRAIODOPHENOLPHTHALEIN IN CHOLECYSTOGRAPHY

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**D**URING the last two years many comprehensive articles have been written on the use of tetraiodophenolphthalein for gall bladder visualization. Its value has been proved beyond question, and cholecystography now ranks as one of the most important recent advances in diagnostic procedures. The technique of the dye administration has varied considerably, and the outlining of a routine method that has proven satisfactory should contribute to a more rapid increase in general usage of this test.

In Stanford medical department we have used sodium tetraiodophenolphthalein exclusively for the last eight months, and have given it to private as well as to clinic patients. Two methods of administration have been utilized: giving the dye in pill form by mouth, and in solution by intravenous injection. The pills have been given to the outpatients, while those receiving it by vein have been required to enter the hospital. Two hundred and seventy-three patients have taken the pills, 122 the injection.

In the oral method stearin-coated five-grain pills are given, each patient taking one pill per ten pounds of body weight. After a light dinner and at about 6 p. m. all the pills are swallowed, the patient being instructed to take plenty of water with them, to lie down and to take nothing more by mouth. Outpatients having a complete gastrointestinal x-ray series routinely take tetraiodophenolphthalein pills the evening of the first day of the examination. The first gall bladder visualization plate is taken at the time of the twenty-four-hour gastrointestinal examination, on the morning of the second day. A certain number of patients vomit the pills, which makes further procedure with the test impracticable. In accordance with other observers (1), (2), (3), (4), I have found cholecystography by means of the pills unreliable, except for the visualization of the normal gall bladder.

The sodium salt of tetraiodophenolphthalein as prepared by the Eastman Kodak Company of Rochester, New York, is used for intravenous injection. This is a light blue crystalline compound with a molecular weight of 682 grams, which is 61 per cent iodine by weight. It deteriorates on exposure to the light. A solution is prepared by dissolving three grams of the dye in 50 cc. of distilled water, and autoclaving for twenty minutes. Sterilization may

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also be accomplished by placing the flask in a boiling-water bath for twenty minutes.

There are two methods of giving intravenous tetraiodophenolphthalein: one by syringe, the other by gravity. The former has not been used in this series, as previous experience makes me feel there is more likelihood of local reaction. The latter has proved satisfactory. The apparatus used is sterilized. A salvarsan cylinder with long rubber connection at the bottom is set up on a stand. A two-way Kaufman-Luer syringe with intravenous needle is attached to the tubing. Normal saline at body temperature is allowed to flow through the tube until all air is expelled. The solution of dye is filtered through medium filter paper into a sterile bottle, heated to body temperature and added to about 10 cc. of normal saline already in the cylinder. The use of the two-way Luer facilitates the injection in that a direct flow is established as soon as the needle is inserted. Special care is exercised in making sure the needle is well in the vein. Five to ten minutes are allowed for the injection, and the dye is washed out of the apparatus with about 25 cc. of normal saline at body temperature.

In 122 patients receiving intravenous injections of tetraiodophenolphthalein there were but four general reactions.\* Only one of these was of a serious nature. Twenty minutes after receiving the dye the patient had a chill with rapid weak pulse, pallor and fall in blood pressure, but responded rapidly to adrenalin subcutaneously. One other patient had a mild chill ten minutes afterward. It is worthy of note that both these patients had their reactions very soon after injection. Two patients suffered nausea and vomiting two to three hours after administration of the dye, but as both had had nausea and vomiting previously these symptoms may not have been due to the dye. Only two local reactions have occurred with the gravity method. These consisted of local discoloration with slightly painful thrombosis, but no induration or sloughing. Hot compresses relieved the pain.

The intravenous dye may be given on the first day of the gastrointestinal x-ray series, or independently. At first the injections were given about 10 p. m., nothing being allowed after supper until noon of the next day, the routine orders for the oral and intravenous methods being the same. X-ray plates were taken at 8 and at 11 a. m. on the second day, and a third following a full lunch. It has been found simpler to inject the dye at 5 p. m., the patient going without supper but receiving fluids up until midnight. On the next day the first x-ray plate is taken about 8 a. m. on a fasting stomach, a breakfast rich in fats is given and a second x-ray taken at 11 a. m. The series of two plates, one at fifteen hours, the other at eighteen hours after injection, has been found sufficient to picture the ability of the gall bladder to concentrate and to empty following a meal. X-ray exposures are made, using a Buckey diaphragm in order to get the most constant intensity of shadow, and the degree of dye concentration is interpreted by the method of Newell, (5). Flat plates of the gall bladder region are taken routinely preceding cholecystography. Close co-operation with the

x-ray department has been most valuable in accurate interpretation of the findings.

Twenty patients receiving dye intravenously subsequently came to operation, and in only two, or 10 per cent, was diagnosis by cholecystography in error. One diseased gall bladder was visualized, and one normal gall bladder was not.

#### CONCLUSIONS

1. The present technique of oral administration of tetraiodophenolphthalein is unsatisfactory.
2. The intravenous injection of tetraiodophenolphthalein as outlined has proven simple and efficient, and general reactions occurred in only 3 per cent of 122 cases.
3. Cholecystography by the intravenous method should be used as a diagnostic procedure in cases suspected of having gall bladder disease.

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\* Since the writing of this article several severe reactions occurred following the intravenous use of a supply of dye which had not been kept free from exposure to light. The exact cause of these reactions has not yet been worked out. A new supply of dye is giving satisfactory results.

The medical profession of France confronts at present two attitudes: (1) that of the Union des syndicats médicaux, a quasi-official organization, accustomed to treat with the public authorities and which has indicated a willingness to discuss the question of fees with the Caisse d'assurances and to submit a minimum schedule, and (2) that of a certain number of *syndicats* which refuse to enter into any discussion with the *caisses* and which declare that to do so would be tantamount to allowing themselves to be reduced to a wretched condition of slavery, an example of which is furnished by many of the physicians of Alsace-Lorraine, where this form of social insurance has been in force for the last twenty years or more. In Alsace-Lorraine these, *syndicats* assert, the *caisses* have reduced a good part of the physicians to mere wage-earners, poorly paid and overworked. Even hospitals in many instances belong to or are under the control of the *caisses*, which furnish care of all sorts to their clientele without reference to the physicians. The medical profession of Alsace-Lorraine is thus divided into two groups, one harshly or even rudely treated by the *caisses* and merely able to exist, and another group which is independent of the *caisses* but which is compelled to renounce entirely all claims to patients among the working classes, which, in certain regions, constitute the chief source of income.—J. A. M. A., August 14, 1926.

But a little difficulty presents itself. The emergence of science has delegated to a twilight zone the gods and myths invoked by the old-time medicine men. Science is on the throne. Softly; what does the commonality know about science? Only enough not to blow out the gas, and to read scientific supplements in the Sunday newspapers. Good. Science, for the mass of men, is only a new mysticism; a shift from elves in glades to elves in molecules and air waves and germ plasms.—Stuart Chase, Harper's, September.